

Transforming legacy data into state-of-the-art interactive visualizations



November 13, 2013 / Washington , D.C.

Mark Elbert

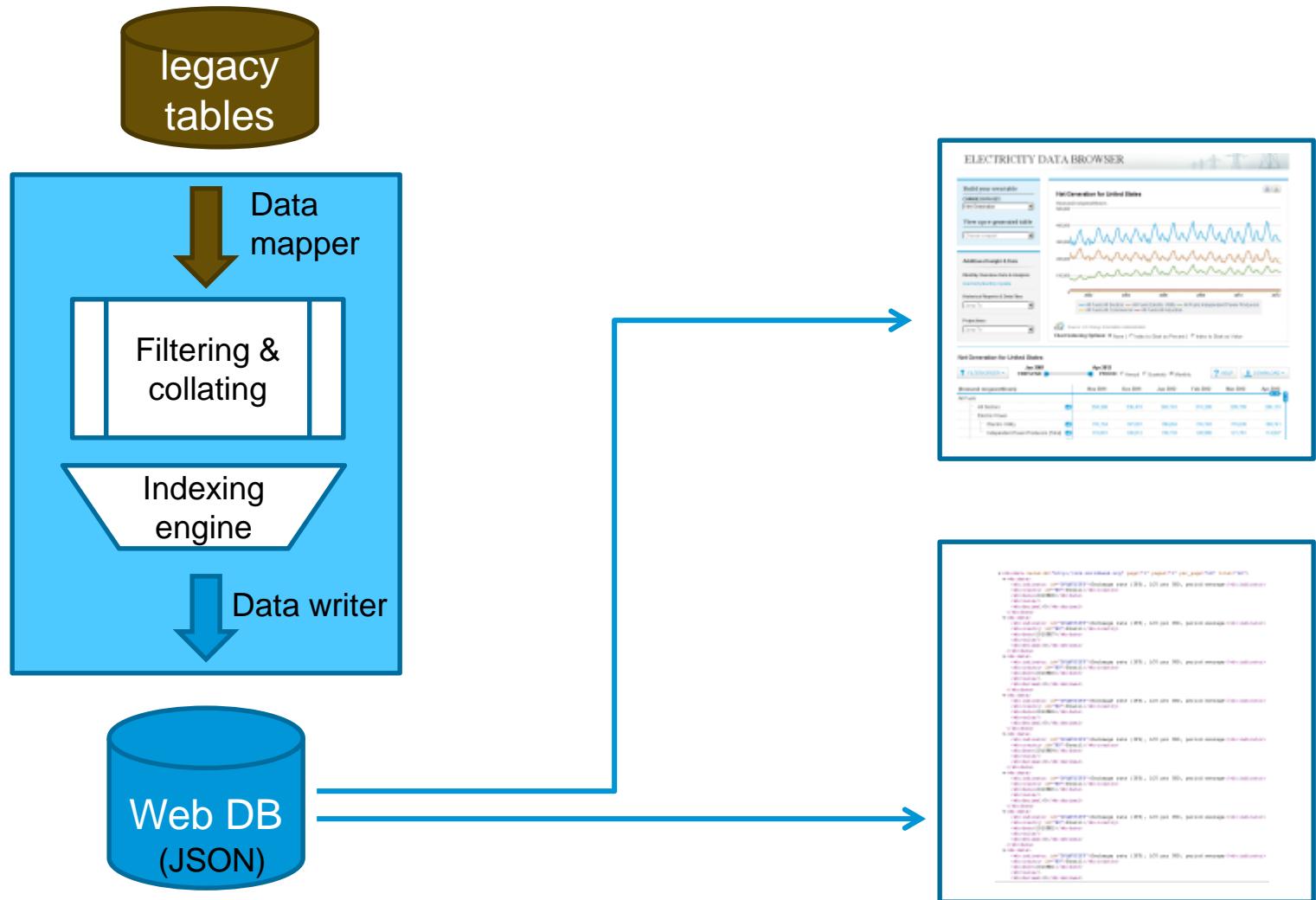
Director, Office of Web Management

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What to do when your data is in legacy table structures?

YEAR	MONTH	PLANT_CODE	PLANT_STATE	REGULATORY_STATUS	PRIMARY_PURPOSE	SECTOR_NUMBER	PLANT_NAME	CHP_STATUS	RESPONDENT_FREQUENCY	PRIME_MOVER_CODE	BOILER_ID	FUEL_TYPE_CODE	TOTAL_CONSUMPTION	AVER
► 2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	09HR82	NG		1690
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	10HR82	NG		2426
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	11HR82	NG		2787
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	12HR82	NG		96583
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	13HR82	NG		4650
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	14HR82	NG		5271
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	16E01	NG		67206
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	17E01	NG		71489
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	18E01	NG		19210
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	19E01	NG		35838
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	EIA005	NG		54554
2009	10	10745	MI	UNR		22	3 Midland Cogeneration Venture	Y	M	CA	EIA006	NG		29360
2009	10	10746	PA	UNR		22	2 American Ref-Fuel of Delaware Valley	N	M	ST	BLR1	MSB		12400
2009	10	10746	PA	UNR		22	2 American Ref-Fuel of Delaware Valley	N	M	ST	BLR1	MSN		4133
2009	10	10746	PA	UNR		22	2 American Ref-Fuel of Delaware Valley	N	M	ST	BLR1	NG		574
2009	10	10746	PA	UNR		22	2 American Ref-Fuel of Delaware Valley	N	M	ST	BLR2	MSB		12400
YEAR	MONTH	PLANT_CODE	PLANT_STATE	REGULATORY_STATUS	PRIMARY_PURPOSE	SECTOR_NUMBER	PLANT_NAME	CHP_STATUS	RESPONDENT_FREQUENCY	PRIME_MOVER_CODE	GENERATOR_ID	GROSS_GENERATION	NET_GENERATION	
► 2009	6	52007	VA	REG		22	1 Mecklenburg Power Station	N	M	ST	GEN2	34647047	32273412	
2009	6	52010	FL	UNR		22	2 Lee County Solid Waste Energy	N	M	ST	GEN1	22642000	19673000	
2009	6	52010	FL	UNR		22	2 Lee County Solid Waste Energy	N	M	ST	GEN2	0	0	
2009	6	52019	VA	UNR		22	2 Doswell Energy Center	N	M	CA	GEN3	24618949	23073760	
2009	6	52019	VA	UNR		22	2 Doswell Energy Center	N	M	CA	GEN6	23163051	21709240	
2009	6	52024	RI	UNR		622	5 Rhode Island Hospital	Y	A	ST	GEN2	837000	811890	
2009	6	52024	RI	UNR		622	5 Rhode Island Hospital	Y	A	ST	GEN4	70000	67900	O
2009	6	52024	RI	UNR		622	5 Rhode Island Hospital	Y	A	ST	NEW1	0	0	
2009	6	52024	RI	UNR		622	5 Rhode Island Hospital	Y	A	ST	NEW3	1904000	1846880	
2009	6	52031	LA	UNR		32411	7 Alliance Refinery	Y	M	ST	GEN2	0	0	O
2009	6	52048	TN	UNR		92	5 Vanderbilt University Power Plant	Y	M	ST	GEN1	1281415	1230543	
2009	6	52048	TN	UNR		92	5 Vanderbilt University Power Plant	Y	M	ST	GEN2	1173585	1126994	
2009	6	52056	NY	UNR		22	3 Trigen Nassau Energy	Y	A	CA	ST1	6249000	6061530	
2009	6	52069	TX	UNR		325188	7 Point Comfort Operations	Y	A	ST	GEN1	9010000	8739700	
2009	6	52069	TX	UNR		325188	7 Point Comfort Operations	Y	A	ST	GEN2	7920000	7682400	O
2009	6	52069	TX	UNR		325188	7 Point Comfort Operations	Y	A	ST	GEN3	8985000	8715450	O
2009	6	52069	TX	UNR		325188	7 Point Comfort Operations	Y	A	ST	GEN4	0	0	O
2009	6	52072	VA	UNR		325	7 Radford Army Ammunition Plant	Y	A	ST	GEN1	1996000	1318000	
2009	6	52072	VA	UNR		325	7 Radford Army Ammunition Plant	Y	A	ST	GEN2	1041000	687000	
2009	6	52072	VA	UNR		325	7 Radford Army Ammunition Plant	Y	A	ST	GEN3	0	0	O
2009	6	52072	VA	UNR		325	7 Radford Army Ammunition Plant	Y	A	ST	GEN4	0	0	O
2009	6	52073	CA	UNR		611	5 UCLA So Campus Central Chill Cogen Proj	Y	A	CA	GEN3	3714000	3714000	
2009	6	52088	TX	UNR		22	3 Texas City Power Plant	Y	M	CA	GEN1	26194000	25408180	

challenge: transform EIA's data publishing



The Internet's fallow period: '03 - '10

- The internet turned into a powerful computing platform despite Microsoft
 - Telcos gave us multi megabit bandwidth
 - Google's Chrome started the new browser war for speed
 - processors continued to improve
- open-source JavaScript libraries matured
 - jQuery / jQueryUI
 - jVectorMaps
 - Highcharts



Petroleum & Other Liquids

Crude oil, gasoline, heating oil, diesel, propane, and other liquids including biofuels and natural gas liquids.

Natural Gas

Exploration and reserves, storage, imports and exports, production, prices, sales.

Electricity

Sales, revenue and prices, power plants, fuel use, stocks, generation, trade, demand & emissions.

Consumption & Efficiency

Energy use in homes, commercial buildings, manufacturing, and transportation.

Coal

Reserves, production, prices, employment and productivity, distribution, stocks, imports and exports.

Renewable & Alternative Fuels

Includes hydropower, solar, wind, geothermal, biomass and ethanol.

Nuclear & Uranium

Uranium fuel, nuclear reactors, generation, spent fuel.

Total Energy

Comprehensive data summaries, comparisons, analysis, and projections integrated across all energy sources.

Highlights

This Week in Petroleum ▾

Weekly Petroleum Status Report ▾

Weekly Natural Gas Storage Report ▾

Natural Gas Weekly Update ▾

Electric Power Monthly ▾

Quarterly Coal Report ▾

Monthly Energy Review ▾

Residential Energy Consumption Survey 2009 ▾

Electricity Data Browser ▾

largest
producer in

Brief ▾

lights

futures price

107.65/bbl

week earlier

year earlier

Natural gas futures price

8/30/2013: \$3.581/mmBtu

↑ \$0.096 from week earlier

↑ \$0.833 from year earlier

Weekly coal production

8/24/2013: 20.692 million tons

↓ 0.081 million tons from week earlier

↑ 0.380 million tons from year earlier

Natural gas inventories

despite changes to market conditions. However, storage capacity utilization varies by EIA region because of differences in weather patterns, types of facilities, pipeline constraints, proximity to supplies, and regulations. [More ▾](#)

End-of-October natural gas storage capacity utilization by Lower 48 storage region (2005-13)



What's New

[Malaysia Country Area](#)
September 3

[Natural Gas Monthly](#)
August 30

[The Availability and Use of Petroleum and Petroleum Products Produced in Countries Other Than Iran](#),
August 29

[More ▾](#)

Coming Up

Mark Elbert, Washington, D.C.,
November 14, 2013

ELECTRICITY DATA BROWSER



This is the top level selector for the Electricity Data Browser. Choose a report, which correspond to the chapters in the [Electric Power Monthly](#), to automatically select a dataset and configure the filter. Alternatively, you can select a dataset directly but then you must configure the filter. It may be helpful to use the reports as a starting point and then modify them using the FILTER/ORDER control below.

Change Data Set

Net Generation

OR

View a pre-generated report

Choose a report

Net Generation for All Sectors, Monthly

thousand megawatthours

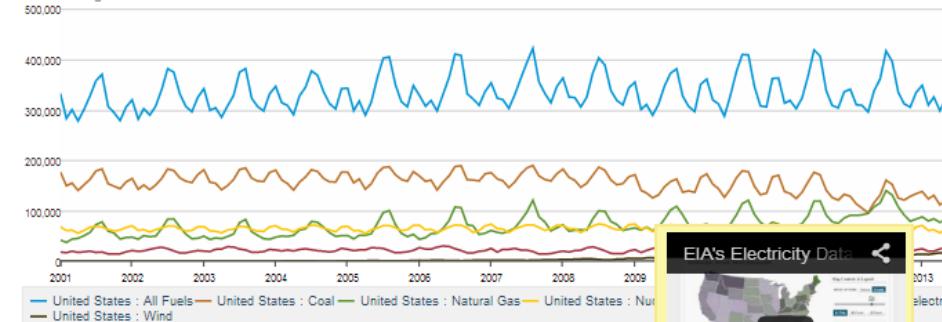


CHART INDEXING OPTIONS:

None

Index to Start as Percent

Index to Start as Value

EIA's Electricity Data



These controls change the charting options. For time-series charts, you may index the chart to the first point by value or percent. For column charts, you may change between values and percent change, and change which data points are graphed.

Change Data

Click here to display analysis and links related to the current data being shown.

OR

View a pre-generated report

Choose a report

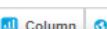
Play the short video to learn how to use this tool. Click anywhere else to close these help tips.



HELP



This menu provides options to download the table or graphic data in CSV format, as well as an Image or PDF of the graphic.



Jan 2001

Jun 2013

Use this menu to change the action associated with the icons in the table. The API icon provides a link to EIA's API for each series. The pin series icon allows you to preserve a series for comparison across data sets.

Click on the , , , icons to add and remove series from the results table to the graph. Use the toggle buttons above the table to change the action.

Once you have chosen a dataset, open the FILTER/ORDER tool. Use the left and right arrows to select the prime filter. The prime filter only allows a single selection, creating manageable results set. You will find that you can quickly get, visualize and download the electricity information you need by carefully choosing the category order and the filters.

Click the icon to "pin" the series for comparison across data sets. Click the icon to open a link to the series in EIA's API. Use the toggle buttons above the table to change the action.

The categories displayed and the hierarchy can be change via the FILTER/ORDER control to the upper left of this table.

Net Generation

United States

All Fuels

Coal

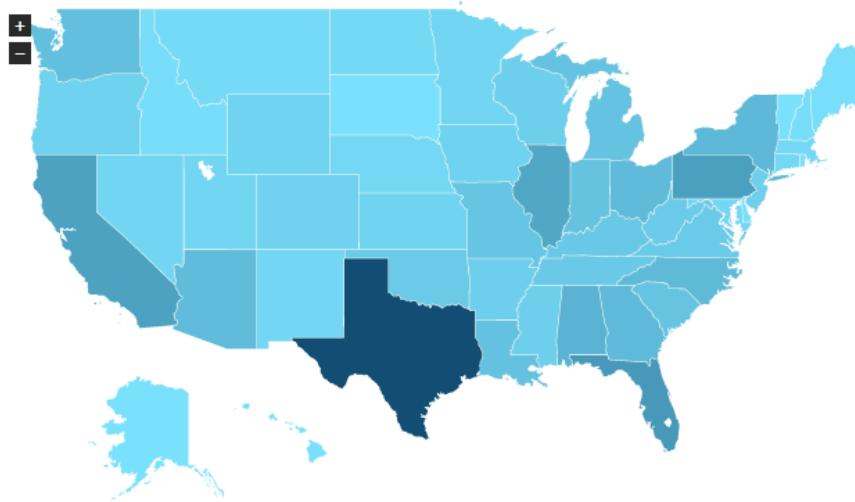
Petroleum

Natural Gas

Conventional Hydroelectric

Other Renewables

Net Generation : All Fuels : All Sectors Jun 2013



Map Controls & Legend

VALUE OPTIONS: **Values** Growth

Jun
2013

▶ Play □ Pause ⏪ Reset

thousand megawatthours

-1 48,328

Value is not available

Change Data Set

OR

View a pre-generated report

Net Generation

Choose a report

FILTER/ORDER

ANALYSIS

Time-Series

Column

Map

HELP

DOWNLOAD

Pin API

Jan 2001

Jun 2013

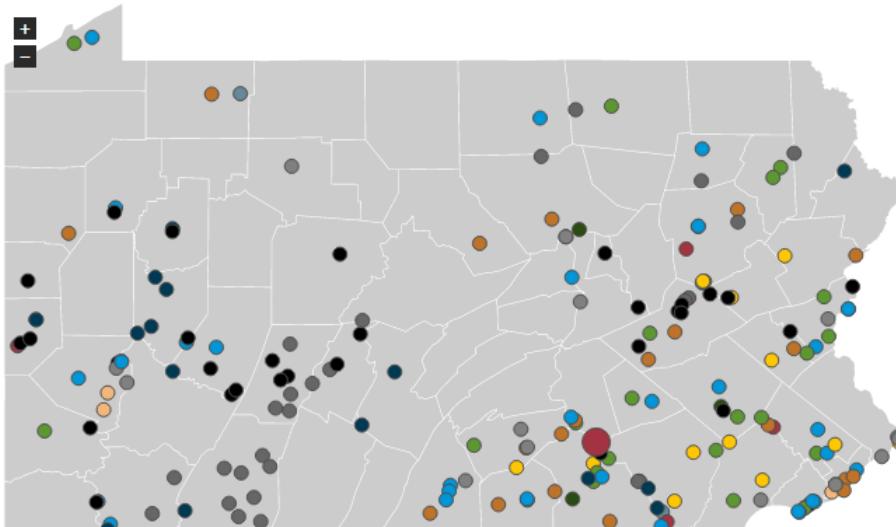
Annual

Quarterly

Monthly

Net Generation for All Sectors (thousand megawatthours)	Mar 2013	Apr 2013	May 2013	Jun 2013
United States				
All Fuels	325,372	298,261	322,118	356,400
Coal	131,032	112,293	119,943	138,872
Petroleum Liquids	962	965	1,034	1,011
Petroleum Coke	1,000	875	1,322	1,271
Natural Gas	84,713	77,502	83,491	98,912

Number of Plants for All Fuels, Pennsylvania, All Sectors



Change Data Set

Plant Level Data

OR

View a pre-generated report

Choose a report

List of Plants for All Fuels, Pennsylvania, All Sectors

FILTER/ORDER ▾

? HELP

DOWNLOAD ▾

Jun 2013

Annual Quarterly Monthly

Plant Name	Plant Code	State	Sector Name	Prime Movers	Fuel Types
Three Mile Island	8011	PA	Electric Utility Non-Co...	ST	NUC



Three Mile Island, Monthly

megawatthours

800,000

600,000

400,000

200,000

0

-200,000

2001

2002

2003



Source: U.S. Energy Information Administration

CHART INDEXING OPTIONS:

Change Data Set

Choose a Data Set

< Return to previous page

Plant name: Three Mile Island | Pl

State: PA | Sector: Electric Utility

FILTER/ORDER ▾

Time ▾

Pi API

Three Mile Island

Net Generation (megawatthours)

All Primemovers (ALL)

Nuclear (NUC)

Click to view series in API Browser

Nuclear (NUC)

Fuel Consumption MMBtus (MMBtu)

EIA APPLICATION PROGRAMMING INTERFACE

Introduction

Registration

API Browser

Documentation

- Query overview
- Category Query
- Series Query
- Series Data Query
- Series Categories Query
- Updates Data Query

API Query Browser

EIA Data Sets

API CALL TO USE:

http://api.eia.gov/series?api_key=YOUR_API_KEY_HERE&series_id=ELEC.PLANT.GEN.8011-NUC-ALL.M

SERIES NAME: Net Generation : Three Mile Island : Nuclear : All Primemovers : Monthly

SERIES ID: ELEC.PLANT.GEN.8011-NUC-ALL.M

UNITS: megawatthours

LAST UPDATED: 2013-08-23 17:37:44.0

DESCRIPTION: Nuclear fuel;

LATITUDE: 40.1515

LONGITUDE: -76.7232

Net Generation : Three Mile Island : Nuclear : All Primemovers : Monthly

megawatthours

750,000

500,000

250,000

0

-250,000

2002

2004

2006

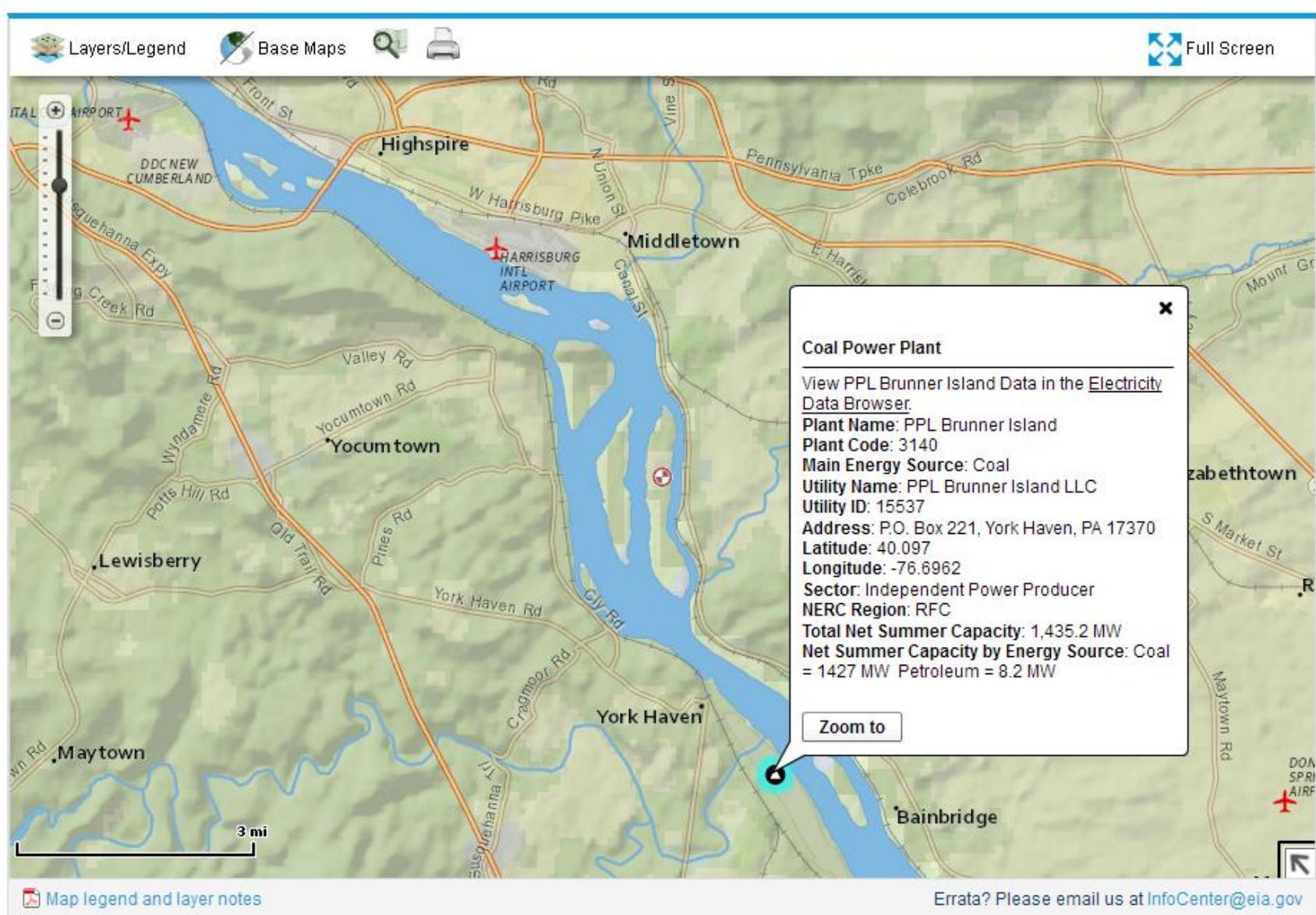
2008

2010

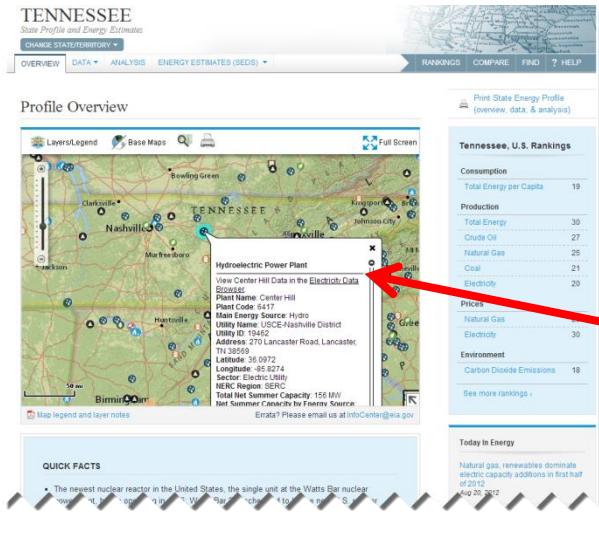
2012

Series ID: ELEC.PLANT.GEN.8011-NUC-ALL.M

U.S. Energy Mapping System



Data ecosystem



```
{"request":{"command":"series","series_id":"ELEC.PLANT.GEN.6417-WAT-ALL.A"}, "series":[{"series_id":"ELEC.PLANT.GEN.6417-WAT-ALL.A", "data":[{"year":2012, "value":244685}, {"year":2011, "value":390119}, {"year":2010, "value":251053}, {"year":2009, "value":377491}, {"year":2008, "value":181726}, {"year":2007, "value":102447}, {"year":2006, "value":292362}, {"year":2005, "value":263951}, {"year":2004, "value":471543}, {"year":2003, "value":444293}, {"year":2002, "value":422206}, {"year":2001, "value":285082}], "name":"Net Generation : Center Hill : Conventional Hydroelectric : All Primemovers : Annual", "units":"megawatthours", "f": "A", "unitshort": "", "description": "", "copyright": "None", "source": "EIA, U.S. Energy Information Administration", "iso3166": "USA-TN", "lat": "36.0972", "lon": "-85.8274", "start": "2001", "end": "2012", "updated": "22-MAR-13 03.12.35 PM"}]}
```

Electric Power Monthly

Data for January 2013 | Release Date: March 22, 2013 | Next Release: April 2013
| full report

Previous Issues

Issue: February 2013

Format: pdf

Table 1.1. Net Generation by Energy Source: Total (All Sectors), 2003-January 2013

(Thousand Megawatthours)

Period	Coal	Petroleum Liquids	Petroleum Coke	Natural Gas	Other Gas	Nuclear	Hydroelectric Conventional	Other Renewable Sources	Hydroelectric Pumped Storage	Other	Total
Annual Totals											
2003	1,973,737	102,734	16,672	649,908	15,600	763,733	275,806	79,487	-8,535	14,045	3,883,185
2004	1,978,301	100,391	20,754	710,100	15,252	788,528	268,417	83,000	-8,488	14,232	3,970,555
2005	2,012,873	99,840	22,385	760,960	13,464	781,986	270,321	97,329	-6,558	12,821	4,055,423
2006	1,990,511	44,460	19,708	816,441	14,177	787,219	289,245	96,525	-6,558	12,974	4,064,702
2007	2,016,456	49,505	16,234	895,590	13,453	805,425	281,310	105,238	-6,896	12,231	4,156,745

ELECTRICITY DATA BROWSER

